Title

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Simulations of ion beam heated targets for warm dense matter (WDM) physics and inertial fusion energy*, J. Barnard, A. Friedman, M. Marinak, L.J. Perkins, *LLNL*, J. Armijo, F. Bieniosek, E. Henestroza, M. Leitner, B.G. Logan, R. More, P. Ni, G. Penn, P. Roy, P. Seidl, J. Wurtele, A. Zeballos, A. Zylstra, *LBNL*, R. Davidson, L. Grisham, I. Kaganovich, *PPPL*, C. Debonnel, *CEA/DIF*, P. Stoltz, S. Veitzer, *Tech-X* -- We present simulations and analysis of ion beam heating of foil targets in the WDM regime for prospective experiments on the Neutralized Drift Compression Experiment (NDCX-1) and its proposed upgrade (NDCX-II). The simulations were carried out using the multi-physics rad/hydro code HYDRA[1], as well as the 1D codes DPC[2] and DISH[3]. Calculations of droplet radius evolution and ion energy deposition refinements were carried out. Initial simulations of direct drive capsules using temporally tailored ion beams will also be presented.

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[1]M. M. Marinak, et al, Phys. Plasmas **8**, 2275 (2001); [2]R. More, et al, JQSRT **99**, 409 (2006); [3]DISH is a Deeply Simplified Hydrodynamics code authored by R. More, June 2007.